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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/732,725	12/11/2000	Takatoshi Kato	50395-076	2352

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EXAMINER

SONG, SARAH U

ART UNIT	PAPER NUMBER
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2874

DATE MAILED: 01/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/732,725

Applicant(s)

KATO ET AL.

Examiner

Sarah Song

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MW

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 December 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____ .
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3,5 . 6) ☐ Other: .

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The prior art documents submitted by the applicant in the Information Disclosure Statement filed on March 5, 2001 and September 22, 2003 have all been considered and made of record (note the attached copy of form PTO-1449).

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the loss increase due to OH group at a wavelength of 1380 nm of 0.1dB/km or less must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

4. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

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The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 1-4 and 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over**

Cohen et al. (GB 2116744 A). Cohen et al. discloses an optical fiber whose chromatic

dispersion is about -20 ps/nm/km or more but about -3 ps/nm/km or less (or about -16

ps/nm/km or more but about -4 ps/nm/km or less; or about -12 ps/nm/km or more but about -4

ps/nm/km or less) at all wavelengths in the range of 1250 nm to 1650 nm. Figure 5 shows curve

13.1 wherein the dispersion is clearly greater than -12 ps/nm/km for all wavelengths in the range

of 1250 nm to 1650 nm. The upper limit of dispersion (at $1.4\ \mu\text{m}$) shown in Figure 5 appears to

be approximately -3 or -4 ps/nm/km, but is not specifically disclosed in the specification.

However, since the upper limit of the disclosed range of dispersion for curve 13.1 is at least very nearly the upper limit of the claimed range, the claimed range would have been obvious to one of ordinary skill in the art.

7. Regarding claims 7 and 8, Cohen et al. discloses the refractive index profile claimed, but refers to the regions as a core and first through fourth cladding regions as opposed to a central core, second core, third core, and inner and outer clad as claimed (see Figure 3 and page 60, lines 60+). However, since the fiber profile satisfies the claimed profile, one of ordinary skill in the

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art would have recognized that the fiber of Cohen et al. provides the same light guiding characteristics as the claimed fiber. Therefore, although the nomenclature of Cohen et al. differs from that of the present claims, it would have been obvious to one of ordinary skill in the art that the fiber of Cohen et al. is structurally the same as the claimed fiber.

8. Regarding claim 9, Cohen et al. discloses a relative refractive index difference of the central core to be 0.3%. Cohen et al. does not disclose the relative refractive index difference to be in the range of 0.4% to 0.7%. The disclosed feature is very near the claimed range. It would have been within the level of ordinary skill to optimize the refractive indices to optimize the light guiding characteristics of the fiber. Therefore, since the disclosed relative refractive index difference of the central core regions is near that of the claimed range, the claimed range would have been obvious to one of ordinary skill in the art to optimize the light guiding characteristics of the fiber.

9. **Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cohen et al. as applied to claim 1 above, and further in view of Sarchi et al. (U.S. Patent Application Publication 2002-0102082).** Cohen et al. does not specifically disclose an effective area at a wavelength of 1550 nm. Sarchi et al. discloses an effective area of greater than $40 \mu\text{m}^2$ at a wavelength of 1550 nm. Sarchi et al. discloses that the larger effective area results in lower non-linearity and facilitates fiber connections and splices. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the fiber of Cohen et al. with an effective area of greater than $40 \mu\text{m}^2$ to reduce non-linear effects and to facilitate fiber connections and splices.

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10. **Claims 6, 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cohen et al. as applied to claim 1 above, and further in view of Chang et al. (U.S. Patent 6,131,415).** Cohen et al. does not specifically disclose an increase in loss due to an OH group at a wavelength of 1380 nm. Chang et al. discloses a method of making a fiber such that the increase in loss due to an OH group at a wavelength of 1380 nm is less than 0.1 dB/km (as shown in Figure 8) thereby provide an optical fiber appropriate for WDM optical transmission in the entire wavelength regions of 1200-1600 nm (see abstract). It would have been obvious to one having ordinary skill in the art to provide the optical fiber of Cohen et al. with an increase in loss due to an OH group at a wavelength of 1380 nm of less than 0.1 dB/km to optimize the fiber of Cohen et al. for WDM transmission over the entire wavelength range of 1200-1600 nm. Regarding claims 10 and 11, see Figure 9.

Conclusion

11. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

12. Any inquiry concerning the merits of this communication should be directed to Examiner Sarah Song at telephone number 571-272-2359. Any inquiry of a general or clerical nature, or relating to the status of this application or proceeding should be directed to the receptionist at

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telephone number 703-308-0956 or to the technical support staff supervisor at telephone number 703-308-3072.


SUS


AKM ENAYET ULLAH
PRIMARY EXAMINER